

WHAT IS CLAIMED IS:

1. A method for determining cell-specific location information to be used in a mobile communication network, the method comprising
encrypting the cell-specific location information on at least one cell
5 of the mobile communication network to be used in the particular mobile communication network by using a predetermined encryption algorithm,
determining substantially the geographical coverage area of the cell,
and
storing the encrypted, cell-specific location information and the geographical coverage area information on the cell in a database such that the two
10 aspects of the information are interlinked.
2. The method of claim 1, further comprising
establishing a data transfer connection from a service provider external to the mobile communication network to the database in order to use the
15 encrypted, cell-specific location information and the geographical coverage area information on at least one cell in cell positioning services.
3. The method of claim 1, further comprising
encrypting, in a mobile station connected to the mobile communication network, the cell-specific location information on the mobile station to be
20 used in the mobile communication network by using the predetermined encryption algorithm.
4. The method of claim 3, further comprising
transmitting a cell positioning service request from the mobile station to the service provider, the cell positioning service request including the
25 encrypted, cell-specific location information on at least one mobile station,
in response to the request, retrieving from the database through the data transfer connection the geographical coverage area information corresponding with the encrypted, cell-specific location information on at least one mobile station in the request, and
30 transmitting a cell positioning service message to the mobile station, the cell positioning service message including at least the geographical coverage area information.
5. The method of claim 4, further comprising
transmitting the geographical coverage area information in the cell
35 positioning service message as graphic map information, such as a bit map.

6. The method of claim 1, further comprising
storing the encrypted, cell-specific location information and the geographical coverage area information on the cells of several different mobile communication networks in the database such that the two aspects of the information are interlinked.

7. A system for determining cell-specific location information to be used in a mobile communication network, wherein

at least one network element of the mobile communication network is configured to encrypt the cell-specific location information on at least one cell to be used in the mobile communication network by using a predetermined encryption algorithm,

at least one network element of the mobile communication network is configured to determine substantially the geographical coverage area of the cell, and

the encrypted, cell-specific location information and the geographical coverage area information on the cell are configured to be stored in a database such that the two aspects of the information are interlinked.

8. The system of claim 7, wherein

a connection is provided from a service provider external to the mobile communication network to the database in order to use the encrypted, cell-specific location information and the geographical coverage area information on at least one cell in cell positioning services.

9. The system of claim 7, wherein

a mobile station connected to the mobile communication network is configured to encrypt the cell-specific location information on the mobile station to be used in the mobile communication network by using the predetermined encryption algorithm.

10. The system of claim 9, wherein

the mobile station is configured to transmit a cell positioning service request to the service provider, the cell positioning service request including the encrypted, cell-specific location information on at least one mobile station,

in response to the request, the service provider is configured to retrieve from the database the geographical coverage area information corresponding with the encrypted, cell-specific location information on at least one mobile station in the request, and to

transmit a cell positioning service message to the mobile station, the cell positioning service message including at least the geographical coverage area information.

5 11. The system of claim 10, wherein
the service provider is configured to transmit the geographical coverage area information in the cell positioning service message as graphic map information, such as a bit map.

10 12. The system of claim 10, wherein
the cell positioning service message further includes at least some of the following information:

15 - location information on at least one other mobile station
- location information on at least one service determined in the service request
- suggested route to a target destination determined in the service request

 - estimated length of distance to be travelled and time used by the mobile station on alleged route
- information on a cell-specific service.

20 13. The system of claim 7, wherein
the encrypted, cell-specific location information and the geographical coverage area information on the cells of several different mobile communication networks are configured to be stored in the database such that the two aspects of the information are interlinked.

25 14. A mobile station, which is configured to
establish a connection to a mobile communication network, and
encrypt the cell-specific location information on the mobile station to be used in the mobile communication network by using a predetermined encryption algorithm.

30 15. The mobile station of claim 14, which is further configured to
transmit a cell positioning service request to a service provider providing a cell positioning service, the cell positioning service request including the encrypted, cell-specific location information on at least one mobile station, and

35 receive a cell positioning service message from the service provider,
the cell positioning service message including at least the geographical cover-

age area information corresponding with the encrypted, cell-specific location information.

5 16. The mobile station of claim 15, which is further configured to present the geographical coverage area information in the cell positioning service message as graphic map information, such as a bit map.

17. The mobile station of claim 15, which is further configured to receive from the service provider the cell positioning service message including at least one aspect of the encrypted, cell-specific location information and the geographical coverage area information linked thereto,
10 determine the encrypted, cell-specific location information corresponding with its location, and

update its current location into the geographical coverage area information in the cell positioning service message.

18. The mobile station of claim 15, which is further configured to
15 determine the encrypted, cell-specific location information corresponding with its location,

in response to a change in location, store successive encrypted, cell-specific location information,

20 transmit a cell positioning service request to a service provider providing a cell positioning service, the cell positioning service request including the encrypted, cell-specific location information stored in memory, and

receive a cell positioning service message from the service provider, the cell positioning service message including at least the geographical coverage area information corresponding with the encrypted, cell-specific location
25 information stored in memory.

19. The mobile station of claim 15, including
computer program means for encoding cell-specific location information on mobile stations to be used in a mobile communication network into encrypted cell identities according to a predetermined algorithm, and

30 computer program means for decoding the encrypted cell identities into cell-specific location information on a mobile station to be used in the mobile communication network according to a predetermined algorithm.

20. The mobile station of claim 19, including
computer program means for generating a cell positioning service
35 request to a service provider providing a cell positioning service, the cell posi-

tioning service request including the encrypted cell identity of at least one mobile station.